

REMARKS

Claims 1-5 are all the claims pending in the application. Claim 5 has been amended, and support for amendment can be found, for example, at page 3 of the present specification.

Entry of the above amendment is respectfully requested.

I. Response to Obviousness-type Double Patenting Rejection

In paragraphs 2-4 at pages 2-3 of the Office Action, claims 1-4 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-6 of co-pending application no. 10/768,674; claims 1 and 6-8 of co-pending application no. 10/934,727; and claims 1-9 of co-pending application no. 10/757,512.

Basically, the Examiner asserts that although the conflicting claims are not identical, they are not patentably distinct from each other because the polycarbodiimide of the present claims is obvious in view of the polycarbodiimide of the co-pending claims.

MPEP 804.I.B. states that if the Examiner has issued a provisional double patenting rejection between two co-pending applications and the only rejection remaining in one application prior to issuing a Notice of Allowance is the provisional double patenting rejection, the Examiner should withdraw that rejection and permit the application to issue as the patent. Then, the "provisional" double patenting rejection in the other applications (i.e., Application Nos. 10/768,674; 10/934,727; and 10/757,512) is converted into a double patenting rejection at the time the present application issues as a patent.

Therefore, Applicants respectfully request that the Examiner withdraw the provisional double patenting rejection in this application, and issue a double patenting rejection in the co-pending applications.

II. Response to Rejection of Claim 5 under 35 U.S.C. § 102(b)

In paragraph 6 at page 4 of the Office Action, claim 5 is rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Saito et al. (US 5,093,214).

Applicants respectfully traverse the rejection and submit that Saito does not teach the present invention.

Claim 5 is directed to a process of reacting a naphthalene diisocyanate, an organic diisocyanate other than naphthalene diisocyanate and a monoisocyanate in the presence of a carbodiimide catalyst, wherein 5% by mol or more of the total organic isocyanate is naphthalene diisocyanate.

Saito et al. discloses producing polycarbodiimide resins by a condensation reaction of an organic diisocyanate, additionally with a monoisocyanate as an end capping agent, and reaction temperatures between 0 to 120°C (*see Examples*). In addition, Saito et al. teaches that the organic diisocyanates can be used singly or in combination (col. 1, lines 54-55).

However, Saito et al. does not teach the use of a naphthalene diisocyanate, another organic diisocyanate and a monoisocyanate. In addition, Saito et al. does not teach or suggest the use of 5 % by mol or more of naphthalene diisocyanate based on the total organic isocyanate (e.g., naphthalene diisocyanate, another diisocyanate and a monoisocyanate).

Thus, Saito et al. does not anticipate the present invention according to claim 5.

Accordingly, withdrawal of the rejection is respectfully requested.

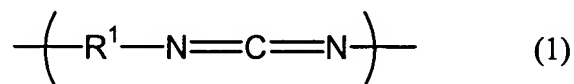
III. Response to Rejection of Claims 1-4 under 35 U.S.C. § 103(a)

In paragraph 7 at page 4 of the Office Action, claims 1-4 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Saito et al.

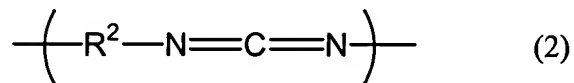
The Examiner's reliance on Saito et al. is substantially the same as that set forth above. The Examiner acknowledges that Saito et al. does not disclose the claimed relationship between formula (1) and (2) of the present invention.

Applicants respectfully traverse the rejection and submit that Saito et al. does not teach or suggest the present invention.

The present invention according to claim 1 is directed to a polycarbodiimide copolymer having a repeating structural unit represented by the following formula (1) in a number "m":



where R¹ means a naphthylene group, and a repeating structural unit represented by the following formula (2) in a number "n":



where R² means an organic diisocyanate residue other than the aforementioned R¹, and also having on both termini a terminal structural unit derived from a monoisocyanate, where m + n is from 3 to 200 and n/(m + n) is from 0.05 to 0.99. The present invention according to claim 3 is a solution comprising the polycarbodiimide copolymer of claim 1. The polycarbodiimide of the present invention has a high index of refraction, which can be used for optical applications.

The high index of refraction of the present invention is achieved by limiting R^1 to a naphthylene and by defining m and n, and the combination of the structural units of formulae (1) and (2) provides an effect of assuring transparency.

Although Saito et al. discloses that the polycarbodiimide resins comprise at least one kind of recurring unit represented by $-R-N=C=N-$, the specific examples of the polycarbodiimide resins at cols. 2-3 comprise a single type of repeating unit. In addition, none of the Examples appear to be directed to polycarbodiimide resins where two different types of organic diisocyanates (e.g., naphthalene diisocyanate and another type of diisocyanate) were used. Further, there is no disclosure in Saito et al. with respect to any relationship between repeating units. Thus, there is no teaching or suggestion in Saito et al. that would lead one of ordinary skill in the art to prepare a polycarbodiimide having the structure of the present invention with the claimed relationship between formula (1) and (2).

Accordingly, Saito et al. does not render the present invention according to claims 1 and 3 obvious.

In addition, claims 2 and 4 depend, directly or indirectly, from claim 1. Therefore, it is respectfully submitted that these claims are patentable for at least the same reasons as claim 1.

In view of the above, withdrawal of the rejection is respectfully requested.

IV. Conclusion

For the foregoing reasons, reconsideration and withdrawal of the obviousness-type double patenting, §102 and §103 rejections, and allowance of claims 1-5 are respectfully requested.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/773,296

Attorney Docket No.: Q79398

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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